

ABSTRACT OF THE DISCLOSURE

Disclosed is a method for forming a shallow trench isolation. A pad oxide layer is formed on a semiconductor substrate. First and second stopping layers are sequentially formed on the pad oxide layer. The second stopping layer, the first stopping layer, the pad oxide layer and the semiconductor substrate are etched to form a second stopping layer pattern, a first stopping layer pattern, a pad oxide layer pattern and a trench. A trench inner wall oxide layer is formed at an inner surface portion of the trench. A nitride layer liner is formed on a resulted structure. A field oxide layer is formed in the trench. By selectively removing the second stopping layer pattern, the first stopping layer pattern is exposed. Then, the first stopping layer pattern is removed. Since the chemical mechanical polishing is stopped at the second stopping layer pattern, the first stopping layer pattern is prevented from erosion when the chemical mechanical polishing process is carried out. Since the thickness of the first stopping layer pattern is uniformly maintained, the liner dent created at a surface boundary between the active area and the field area is reduced when a phosphoric acid stripping process is carried out.

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